

Method 31 and pilling resistance of not lower than third class in JIS L-1076.6.1A method, in addition to a water repellent property that the animal fiber originally possess.

18. (New) The animal fiber according to Claim 17, wherein, as a measure of shrink proofing, the value represented by a difference ( $\mu_a - \mu_w$ ) between the coefficient of friction in the tip to root direction ( $\mu_w$ ) with respect to a fiber direction, measured in accordance with JIS L-1015 method, is lowered by 30% or more in comparison with the difference ( $\mu_a - \mu_w$ ) of untreated animal fiber in coefficient of static friction or in coefficient of dynamic friction, with the value of  $\mu_a$  being approximately the same as a value in the case of the untreated animal fiber, and the value of  $\mu_w$  being higher by 30% or more in comparison with a value in the case of the untreated animal fiber.

19. (New) The animal fiber according to Claim 17, wherein, assuming that an absorbance of an absorption band corresponding to amide I is set to 1 in a reflection FT-IR measuring method, the degree of oxidation of a -S-S- bond (cystine bond) in an epidermal cell of the animal fiber is represented by a relative absorbance of not less than 0.1 in an absorption band of  $-SO_3H$  group (sulfonic acid group) and/or a relative absorbance of not less than 0.08 in an absorption band of  $-S-SO_3Na$  group (Bunte salts).

20. (New) The animal fiber according to Claim 17, wherein, as a measure of the shrink proofing, an animal fiber has an area of shrinkage rate of not more than 8% in a three-hours aqueous washing, when measured as a felting shrinkage rate in conformity with a WM TM 31 method (Woolmark Test Method 31), and/or wherein, as a measure of shrink proofing, the value represented by a difference ( $\mu_a - \mu_w$ ) between the coefficient of friction in the tip to root direction ( $\mu_a$ ) and the coefficient of friction in the root to tip direction ( $\mu_w$ ) with respect to a fiber direction, measured in accordance with JIS L-1015 method, is lower by 30% or more in comparison with the difference ( $\mu_a - \mu_w$ ) of untreated animal fiber in coefficient of static friction or in coefficient of dynamic friction, the value of  $\mu_a$  being approximately the same as a value in the case of the untreated animal fiber, and the value of  $\mu_w$  being higher by 30% or more in comparison with a value in the case of the untreated animal fiber, and further, wherein the pilling resistance is not lower than third class in JIS L-1076.6.1A method.

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21. (New) The animal fiber according to Claim 17, wherein the animal fiber is one selected from the group consisting of wool, mohair, alpaca, cashmere, llama, vicuna, camel and angora.

22. (New) The animal fiber according to Claim 20, wherein the animal fiber is one selected from the group consisting of wool, mohair, alpaca, cashmere, llama, vicuna, camel and angora.

23. (New) The animal fiber of any one of Claims 17 to 22, produced by a method which comprises;

- a) a first step in which a -S-S- bond in an animal fiber cuticle cell is treated by primary oxidation with an oxidizer having an ability to oxidize a cystine -S-S- bond in animal fiber,
- b) a second step in which the primary-oxidized -S-S- bond is treated by oxidation with ozone into any one or more higher order oxidized states of di, tri or tetra-oxidized state, and
- c) a third step in which said -S-S- bond in higher oxidized state is treated by reduction of cleavage.

24. (New) The animal fiber of Claim 23, wherein the oxidizer is one or a mixture of two or more selected from the group consisting of persulfuric acid, peracetic acid, performic acid, neutral salts and acidic salts of these per-acids, potassium permanganate and hydrogen peroxide.

25. (New) The animal fiber of Claim 23, wherein the first step is conducted by a pad steam method of animal fiber into aqueous solution of oxidizing agent.

26. (New) The animal fiber of Claim 24, wherein the first step is conducted by a pad steam method of animal fiber into aqueous solution of oxidizing agent.

27. (New) The animal fiber of Claim 23, wherein the oxidation treatment with ozone is conducted by blowing aqueous ozone treating liquid containing ozone in the form of ultrafine bubbles of  $5 \mu$  or less to animal fiber in this ozone treating liquid.

28. (New) The animal fiber of Claim 23, wherein the animal fiber is used as cloth or silver mainly composed of animal fibers.

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The above amendment is responsive to points set forth in the Official Action.